

IMS Seminar

Friday, November 8, 2024

1:00 PM, Science 1 - Room G01

**Snacks, coffee, and tea will be served beginning at 12:30 p.m.*



Dr. David Weitz

Professor of Physics and Applied Physics
Harvard University
(Hosted by Dr. Luyi Sun)

Structuring New Materials with Droplet Microfluidics

Abstract: This talk will describe the use of microfluidic techniques to make fluid droplets that can be used as templates for formulating new materials. These materials can exhibit fascinating physical properties and have myriad uses, primarily for encapsulation and release of active ingredients. The use of microfluidics technology enables formulation of highly uniform drops and controlled mixing of multiple fluids. Although the structures are formulated individually, one at a time, scaleup strategies can nevertheless produce sufficient quantities for practical uses. Several examples of these materials will be described for uses in applications such as personal care and controlled delivery and release of drugs.

Biography: Dr. Weitz received his Ph.D. in physics from Harvard University and then joined Exxon Research and Engineering Company, where he worked for nearly 18 years. He then became a professor of physics at the University of Pennsylvania and moved to Harvard at the end of the last millennium as professor of physics and applied physics. He leads a group studying soft matter science with a focus on materials science, biophysics and microfluidics. Several startup companies have come from his lab to commercialize research concepts.